

1 WE CLAIM:

2 1. A server that provides geographic data for client computing platforms
3 comprising:

4 a repository for geographic data,

5 wherein the repository contains data that represent geographic features located in
6 a serviced geographic region, wherein the geographic region is divided into a plurality of
7 pre-determined smaller sub-areas,

8 wherein the data contained in the repository are organized into a plurality of
9 uniform-sized parcels of data,

10 wherein each of said uniform-sized parcels includes data that represent the
11 geographic features located in a separate respective one of the plurality of smaller
12 sub-areas; and

13 a data downloading application run on said server that downloads one or more of
14 said whole uniform-sized parcels of data from said repository to said client computing
15 platforms, as needed, for use therein.

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17 2. The invention of Claim 1 further comprising:

18 a working geographic database associated with said server and used by a
19 navigation application on said server to perform a navigation-related function.

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21 3. The invention of Claim 2 wherein the navigation related function is route
22 calculation.

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24 4. The invention of Claim 1 further comprising:

25 a finder application associated with said server and adapted to find information
26 about businesses based upon specified criteria.

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28 5. The invention of Claim 4 wherein the specified criteria include location-
29 based criteria.

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1 6. The invention of Claim 4 wherein the finder application also finds
2 information about persons.

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4 7. The invention of Claim 1 further comprising:
5 a subscriber services application associated with said server and adapted to
6 provide subscriber services to end users who access the said server.

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8 8. The invention of Claim 1 wherein the repository includes a plurality of
9 collections of geographic data, wherein each collection represents the entire geographic
10 region, wherein each collection is organized into a plurality of parcels of a uniform size,
11 and wherein the parcels in one of said plurality of collections has a different uniform size
12 than the parcels in another of said plurality of collections.

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14 9. The invention of Claim 1 wherein the repository includes a plurality of
15 collections of geographic data, wherein each collection represents the entire geographic
16 region, wherein each collection is organized into a plurality of parcels of a uniform size,
17 and wherein the parcels in one of said plurality of collections contains data that represents
18 different attributes of the represented geographic features than the parcels in another of
19 said plurality of collections.

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21 10 The invention of Claim 1 wherein the server also includes a repository of
22 downloadable applications for downloading and running on client computing platforms.

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24 11. The invention of Claim 10 wherein the downloadable applications are
25 applets.

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27 12. The invention of Claim 10 wherein the downloadable applications are
28 plug-ins.

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30 13. The invention of Claim 10 wherein the downloadable applications include
31 a memory manager application.

1 14. The invention of Claim 10 wherein the downloadable applications include
2 updates for applications already installed on client computing platforms.

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4 15. The invention of Claim 10 wherein the downloadable applications are
5 applets that run in a browser installed on a client computing platform.

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7 16. A method of operation for a navigation system comprising:
8 on a server, receiving a request for geographic data from a client computing
9 platform;
10 determining which pre-computed parcels of geographic data stored with said
11 server to send to the client computing platform to respond to said request, wherein each
12 of the pre-computed parcels of geographic data in a collection thereof corresponds to a
13 separate one of a plurality of geographic sub-areas into which a geographic region is
14 divided; and
15 sending the pre-computed parcels of geographic data that had been determined to
16 the client computing platform.

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18 17. The method of Claim 16 further comprising:
19 on said server, determining a route between an origin and a destination.

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21 18. The method of Claim 17 further comprising:
22 sending data that indicates the route to the client computing platform.

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24 19. The method of Claim 17 wherein the step of determining comprises:
25 identifying which of the geographic sub-areas are located along the route; and
26 determining to send the pre-computed parcels of geographic data that represent
27 the geographic sub-areas identified as being located along the route.

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29 20. The method of Claim 16 further comprising:
30 selecting the collection from a plurality of different collections of pre-computed
31 data parcels.

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21. The method of Claim 20 further comprising:

receiving from the client computing platform an indication of which of said plurality of different collections to send data from.

22. The method of Claim 20 wherein the step of selecting is preceded by accessing a subscriber database that indicates which collection to send data from.

23. An architecture for a navigation system comprising:

a server;

client computing platforms;

a network over which said client computing platforms and said server can communicate with each other;

a geographic database associated with said server;

a geographic data repository associated with said server and containing

pre-computed parcels of geographic data, wherein each parcel in a collection represents geographic features located in a separate one of a plurality of geographic sub-areas into which a geographic region is divided; and

a geographic data providing application on the server that determines which of said pre-computed parcels of geographic data to send to each of said client computing platforms in response to requests therefrom for geographic data.

24. The invention of Claim 23 wherein the pre-computed parcels of geographic data in the collection have a uniform data size.

25. The invention of Claim 23 wherein the collection is one of a plurality of collections of geographic data, each of which is organized into a plurality of pre-computed parcels, and wherein the plurality of pre-computed parcels in one of said plurality of collections has a different uniform data size than the plurality of pre-computed parcels in another of said collections.

1 26. A method of managing memory resources in a client computing platform
2 comprising the steps of:
3 receiving uniform-sized predetermined parcels of data from a server,
4 wherein each uniform-sized predetermined parcel of data contains data that
5 represent geographic features located within a separate respective one of a plurality of
6 sub-areas into which a geographic region is divided; and
7 storing said uniform-sized predetermined parcels of data in corresponding-sized
8 portions of a cache memory in said client computing platform.

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10 27. The method of Claim 26 further comprising:
11 using said uniform-sized predetermined parcels of data to display a map on said
12 client computing platform.

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14 28. The method of Claim 27 wherein said map is a strip map.

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16 29. The method of Claim 27 further comprising:
17 showing a calculated route on said map.

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19 30. The method of Claim 26 wherein the sub-areas corresponding to said
20 uniform-sized predetermined parcels of data received by said client computing platform
21 overlap a portion of a calculated route.

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23 31. The method of Claim 30 wherein the route is calculated on the server.

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25 32. The method of Claim 26 wherein the uniform-sized predetermined parcels
26 of data received by said client computing platform include separate types of data
27 contained in separate uniform-sized predetermined parcels of data.

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29 33. The method of Claim 26 wherein the uniform-sized predetermined parcels
30 of data received by said client computing platform include separate types of data
31 contained in each uniform-sized predetermined parcels of data.

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2 34. The method of Claim 26 further comprising:
3 prior to receiving the uniform-sized predetermined parcels of data from the server,
4 on the client computing platform, identifying types of data needed to support functions
5 provided by the client computing platform.

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7 35. The method of Claim 26 further comprising:
8 using the data contained in said uniform-sized predetermined parcels of data to
9 provide route guidance.

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11 36. The method of Claim 26 further comprising:
12 using the data contained in said uniform-sized predetermined parcels of data to
13 explicate a calculated route.

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15 37. The method of Claim 26 wherein the sub-areas corresponding to said
16 uniform-sized predetermined parcels of data received by said client computing platform
17 overlap an initial portion of a calculated route; and
18 as the client computing platform travels along the calculated route, obtaining
19 additional uniform-sized predetermined parcels of data corresponding to sub-areas that
20 overlap subsequent portions of said calculated route.

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22 38. The method of Claim 26 further comprising:
23 determining a position of the client computing platform relative to roads
24 represented by data contained in said uniform-sized predetermined parcels of data
25 received by said client computing platform.

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27 39. The method of Claim 26 further comprising:
28 determining whether said client computing platform has departed from a
29 calculated route.

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1 40. The method of Claim 39 further comprising:
2 calculating a way back to said calculated route using data contained in said
3 uniform-sized predetermined parcels of data received by said client computing platform.
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5 41. The method of Claim 26 further comprising:
6 downloading an application from the server to be run on said client computing
7 platform.
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9 42. The method of Claim 41 wherein the application downloaded from the
10 server is an applet.
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12 43. The method of Claim 41 wherein the application downloaded from the
13 server is a plug-in.
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15 44. The method of Claim 41 wherein the application downloaded from the
16 server runs in a browser on the client computing platform.
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18 45. The method of Claim 26 further comprising:
19 receiving data from the server that indicates a route between an origin and
20 destination, wherein the route was calculated on the server.
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22 46. The method of Claim 45 further comprising:
23 from the client computing platform, specifying the origin and destination to the
24 server prior to receiving data from the server that indicates the route.
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